
**MECHANISM FOR REDUCING THE VULNERABILITY OF
HIGH EXPLOSIVE LOADED MUNITIONS TO
UNPLANNED THERMAL STIMULI**

ABSTRACT OF THE INVENTION

A new mechanism substantially reduces the vulnerability of explosive load munitions to thermal stimuli, such as fire or heat during transport and storage, thus enhancing personnel safety and the survivability of adjacent munitions. The mechanism includes a threaded fuze adapter made of plastic and having a melting temperature that is lower than the auto-ignition temperature of the explosive. The adapter secures a fuze or metal closing plug to an explosive loaded projectile and is designed to permit venting of combustion gases through the nose of the projectile upon auto-ignition of the explosive, thereby preventing detonation of the explosive and fragmentation of the projectile body. A plastic or metal ring is utilized to support the body of an explosive loaded projectile within a fiberboard packing tube, thus allowing the fuze to readily separate from the projectile body upon the melting of the plastic threaded fuze adapter and subsequent combustion of the explosive during an unplanned thermal stimulus event. An intumescent coating is deposited on the metal ammunition container that is used to package explosive loaded cartridges, to reduce the rate of thermal stimuli to the munitions, thereby ensuring that the plastic fuze adapter of the present invention reaches its melting temperature prior to the explosive attaining its auto-ignition temperature.